

Application No.: 09/578,503**Docket No.: 1509-114****Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (*currently amended*) An apparatus for use in generating configuration information for a computer system employing hierarchical entities, the apparatus comprising:

a policy system for receiving a definition of a high-level policy for the configuration of the computer system and permitted refinements to that policy, the definition referring to a plurality of the entities;

an entity memory for storing information about the computer system and its environment including the entities, the hierarchy thereof and non-hierarchical relations between the entities; and

a processor coupled to the policy system and the entity memory and operable to produce refine-refinement of the high-level policy definition with reference to the permitted refinements thereto and the stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system, the refinement including adding details to the high-level policy definition.

2. (previously presented) An apparatus as claimed in claim 1, and including a user interface with which a user can interact with the apparatus.

3. (original) An apparatus as claimed in claim 2, wherein the processor is operable, in accordance with the high-level policy definition, to present refinement options to the

Application No.: 09/578,503**Docket No.: 1509-114**

user *via* the user interface and to refine the high-level policy definition in dependence upon options selected by the user *via* the user interface.

4. (*currently amended*) An apparatus for use in generating configuration information for a computer system employing hierarchical entities, the apparatus comprising:

a policy system for receiving a definition of a high-level policy for the configuration of the computer system and permitted refinements to that policy, the definition referring to a plurality of the entities;

a user interface with which a user can interact with the apparatus;

a processor coupled to the policy system and the user interface and operable, in accordance with the high-level policy definition, to present refinement information to the user via the user interface so that a refined policy definition deployable on the computer system can be produced, the presented refinement information including added details to the high-level policy information.

5. (original) An apparatus as claimed in claim 4, wherein the processor is operable to present the refinement information to the user as refinement options and to refine the high-level policy definition in dependence upon options selected by the user *via* the user interface to produce the refined policy definition.

6. (previously presented) An apparatus as claimed in claim 2 further including a library of policy templates each template including a respective such high-level policy definition and respective such permitted policy refinements, the library being coupled to the policy system and

Application No.: 09/578,503**Docket No.: 1509-114**

a desired one or more of the policy templates being selectable by the user via the user interface for supply to the means policy system

7. (original) An apparatus as claimed in claim 6, wherein the policy templates have a common format.

8. (*currently amended*) ~~An apparatus as claimed in claim 7 for use in generating configuration information for a computer system employing hierarchical entities, the apparatus comprising:~~

~~a policy system for receiving a definition of a high-level policy for the configuration of the computer system and permitted refinements to that policy, the definition referring to a plurality of the entities;~~

~~an entity memory for storing information about the computer system and its environment including the entities, the hierarchy thereof and non-hierarchical relations between the entities; and~~

~~a processor coupled to the policy system and the entity memory and operable to refine the high-level policy definition with reference to the permitted refinements thereto and the stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system, and~~

~~including a user interface with which a user can interact with the apparatus, further including a library of policy templates each template including a respective such high-level policy definition and respective such permitted policy refinements, the library being coupled to the policy system and a desired one or more of the policy templates being selectable by the user~~

Application No.: 09/578,503**Docket No.: 1509-114**

via the user interface for supply to the means policy system

wherein the processor is operable, in accordance with the high-level policy definition, to present refinement options to the user via the user interface and to refine the high-level policy definition in dependence upon options selected by the user via the user interface, and wherein the policy template format provides for each policy template to have a plurality of components executable in turn by the processor, at least one of the components being a flow directive and causing the processor to present such options to the user via the user interface and to jump to one of a plurality of the other components in dependence upon the flow directive and the selection made by the user via the user interface.

9. (previously presented) An apparatus as claimed in claim 1 wherein at least some of the entities stored in the entity memory are abstract entities, the entity memory also including, for each such abstract entity, a pointer to data in the computer system representing an instance of that abstract entity.

10. (previously presented) An apparatus as claimed in claim 9, wherein:
the refined policy is in terms of a policy context referring to unbound entities and a policy statement; the apparatus includes a rule memory for storing rules for interpreting the policy statement as instructions executable by the computer system; and the processor is operable, with reference to the entity memory to bind the unbound entities in the policy context to instances of those entities, and, with reference to the rule memory to interpret the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

Application No.: 09/578,503**Docket No.: 1509-114**

11. (previously presented) An apparatus for use in generating configuration information for a computer system the apparatus comprising:

a policy system for receiving a policy for the configuration of the computer system in terms of a policy context referring to unbound entities and a policy statement;

an entity memory for storing, for each of the unbound entities, a pointer to data in the computer system representing at least one instance of that entity;

a rule memory for storing rules for interpreting the policy statement as instructions executable by the computer system; and

a processor which is operable, with reference to the pointers, to bind the unbound entities in the policy context to instances of those entities, and, with reference to the interpretation rules, to interpret the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

12. (previously presented) An apparatus as claimed in claim 11, wherein the processor is operable to determine a group of the bound instances, and at least one of the instructions refers to such a determined group.

13. (previously presented) An apparatus as claimed in claim 12, wherein the processor is operable to determine, with reference to the entity memory whether such a determined group is already defined in the computer system and, if not, to generate such an instruction to create the determined group in the computer system.

Application No.: 09/578,503**Docket No.: 1509-114**

14. *(currently amended)* A method for use in generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

receiving a definition of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities; and

refining the high-level policy definition with reference to the permitted refinements thereto and stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system, the permitted refinement information including added details to the high-level policy definition.

15. (original) A method as claimed in claim 14, and including the steps of:

presenting refinement options, in accordance with the high-level policy definition, to the user *via* a user interface; and

refining the high-level policy definition in dependence upon options selected by the user *via* the user interface.

16. *(currently amended)* A method for use in generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

receiving a definition of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities;

presenting refinement information, in accordance with the high-level policy definition, to a user *via* a user interface so that a refined policy definition deployable on the computer system can be produced, the refinement including adding details to the high-level policy definition.

Application No.: 09/578,503**Docket No.: 1509-114**

17. (Original) A method as claimed in claim 16, wherein the refinement information is presented to the user as refinement options, and further including the step of refining the high-level policy definition in dependence upon options selected by the user *via* the user interface to produce the refined policy definition.

18. (previously presented) A method as claimed in claim 16 further including the steps of:
providing a library of policy templates, each template including a respective such high-level policy definition and respective such permitted policy refinements; and
selecting one or more of the policy templates for refinement in accordance with input by the user via a user interface.

19. (Original0) A method as claimed in claim 18, wherein the policy templates have a common format.

20. (*currently amended*) ~~A method as claimed in claim 18, including the steps of~~ A method of generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

receiving a definition of a high-level policy, for the configuration of the system, and permitted refinements to that policy, the definition referring to a plurality of the entities;
presenting refinement information, in accordance with the high-level policy definition, to a user via a user interface so that a refined policy definition deployable on the computer system can be produce, further including the steps of:

providing a library of policy templates, each template including a respective such

Application No.: 09/578,503Docket No.: 1509-114

high-level policy definition and respective such permitted policy refinements; and

selecting one or more of the policy templates for refinement in accordance with
input by the user via a user interface;

further including presenting refinement options, in accordance with the high level policy definition, to the user via a user interface; and refining the high-level policy definition in dependence upon options selected by the user via the user interface wherein the policy template format provides for each policy template to have a plurality of components executable in turn during refinement, at least one of the components being a flow directive and causing such options to be presented to the user via the user interface and the refinement process to jump to one of a plurality of the other components in dependence upon the flow directive and the selection made by the user via the user interface.

21. *(currently amended)* A method ~~as claimed in claim 14~~, of generating configuration information for a computer system employing hierarchical entities, the method comprising the steps of:

receiving a definition of a high-level policy for the configuration of the system and permitted refinements to that policy, the definition referring to a plurality of the entities; and

refining the high-level policy definition with reference to the permitted refinements thereto and stored information about the entities to which the high-level policy definition relates in order to produce a refined policy definition deployable on the computer system,

wherein:

the refined policy is ~~being~~ in terms of a policy context referring to unbound entities and a policy statement;

Application No.: 09/578,503**Docket No.: 1509-114**

the stored information about at least some of the entities relates to abstract entities, and includes, for each such abstract entity, a pointer to data in the computer system representing an instance of that abstract entity; and

the method further includes the steps of: binding, with reference to the stored information, the unbound entities in the policy context to instances of those entities; and interpreting, with reference for stored rules for interpreting the policy statement as instructions executable by the computer system, the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

22. (previously presented) A method for use in generating configuration information for a computer system, the method comprising the steps of:

receiving a policy, for the configuration of the computer system, in terms of a policy context referring to unbound entities and a policy statement;

storing, for each of the unbound entities, a pointer to data in the computer system representing at least one instance of that entity;

storing rules for interpreting the policy statement as instructions executable by the computer system; and

binding, with reference to the pointers, the unbound entities in the policy context to instances of those entities; and

interpreting, with reference to the interpretation rules, the policy statement into a series of instructions to the computer system referring to the bound instances or derivatives of them.

23. (previously presented) A method as claimed in claim 22, further including the

Application No.: 09/578,503**Docket No.: 1509-114**

steps of determining a group of the bound instances, and referring to such a determined group in at least one of the instructions.

24. (previously presented) A method as claimed in claim 23, further including the steps of: determining, with reference to stored information about the entities, whether such a determined group is already defined in the computer system; and, if not, generate such an instruction to create the determined group in the computer system.

25. (previously presented) An apparatus as claimed in claim 4, and including a library of policy templates, each template including a respective such high-level policy definition and respective such permitted policy refinements, the library being coupled to the policy system, and a desired one or more of the policy templates being selectable by the user via the user interface for supply to the policy system.

26. (previously presented) An apparatus as claimed in claim 25, wherein the policy templates have a common format.

27. **(currently amended)** ~~An apparatus as claimed in claim 26, wherein~~ An apparatus for use in generating configuration information for a computer system employing hierarchical entities, the apparatus comprising:

a policy system for receiving a definition of a high-level policy for the configuration of the computer system and permitted refinements to that policy, the definition referring to a plurality of the entities;

Application No.: 09/578,503

Docket No.: 1509-114

a user interface with which a user can interact with the apparatus;

a processor coupled to the policy system and the user interface and operable, in accordance with the high-level policy definition, to present refinement information to the user via the user interface so that a refined policy definition deployable on the computer system can be produced.. and including

a library of policy templates, each template including a respective such high-level policy definition and respective such permitted policy refinements, the library being coupled to the policy system, and a desired one or more of the policy templates being selectable by the user via the user interface for supply to the policy system, wherein the policy templates have a common format, the processor is-being operable to present the refinement information to the user as refinement options and to refine the high-level policy definition in dependence upon options selected by the user via the user interface to produce the refined policy definition; and wherein the policy template format provides for each policy template to have a plurality of components executable in turn by the processor, at least one of the components being a flow directive and causing the processor to present such options to the user via the user interface and to jump to one of a plurality of the other components in dependence upon the flow directive and the selection made by the user via the user interface.

28 (previously presented) A method as claimed in claim 14, further including the steps of:

providing a library of policy templates, each template including a respective such high-level policy definition and respective such permitted policy refinements; and

selecting one or more of the policy templates for refinement in accordance with input by the user via a user interface.

Application No.: 09/578,503**Docket No.: 1509-114**

29. (New) The apparatus of claim 1 wherein the high-level policy is a real humanly understandable policy and the refinement causes details to be added to the high-level policy to maintain the refined high-level policy a humanly understandable policy.

30 (New) The apparatus of claim 4 wherein the high-level policy is a real humanly understandable policy and the presented refinement information causes details to be added to the high-level policy to maintain the refined policy a humanly understandable policy.

31 (New) The method of claim 14 wherein the high-level policy is a real humanly understandable policy and the refinement adds details to the high-level policy to maintain the refined high-level policy a humanly understandable policy.

32 (New) The method of claim 16 wherein the high-level policy is a real humanly understandable policy and the presented refinement information adds details to the high-level policy to maintain the refined policy a humanly understandable policy.